



Waste Screening and General Operations at Construction & Demolition Landfills

Technical Guidance Document SW 02-01

The Kansas solid waste statutes prohibit the disposal of any materials not meeting the legal definition of construction and demolition (C&D) waste in C&D landfills. The primary reason for this is because C&D landfills in Kansas are intended to provide a cost-effective alternative for disposal of relatively inert, non-putrescible wastes such as bricks, concrete, wood, brush, roofing materials, wall and floor coverings, and drywall. Hence, C&D landfills in Kansas are not required to be designed, constructed, and operated with the safeguards such as liners, leachate collection systems, and groundwater monitoring wells that are generally considered appropriate to protect human health and the environment from the potential adverse impacts associated with disposal of other types of waste. Yet loads delivered to C&D landfills from construction and demolition projects often contain unacceptable waste types such as appliances, chemical containers, tires, and friable asbestos. Therefore, C&D landfills are required to perform waste screening to prevent disposal of unacceptable wastes at those facilities.

This document provides general guidance on the various aspects of an acceptable waste screening program for C&D landfills. Definitions and disposal options for construction and demolition wastes are described in Technical Guidance Document SW 94-02.

To be successful, a waste screening program should incorporate a comprehensive, multi-faceted approach. A number of measures involved in implementing an effective waste screening program are summarized below.

Operations Plan

State rules require each permitted landfill to have an approved Operations Plan. Waste screening should be one of the topics covered in the Operations Plan. The landfill manager should see to it that a waste screening program meeting state guidelines is adopted and fully implemented.

In general, the Operations Plan should detail appropriate measures to educate landfill customers about the waste restrictions, prepare the landfill staff to conduct waste screening, and establish waste screening procedures. There may also be other site specific requirements not covered herein.

The Operations Plan for an existing facility may need to be amended if it does not describe waste screening activities, or if it is outdated or inconsistent with this Technical Guidance Document. Any proposed amendments to the Operations Plan should be

submitted to the Bureau of Waste Management for review. Upon approval, the new or amended Operations Plan will become part of the permit requirements for the facility. Therefore, it is important to prepare the Operations Plan with some flexibility to accommodate all anticipated situations.

Educating Customers

Waste screening should begin at the point of waste generation. Construction and demolition crews, and other landfill customers, should segregate C&D wastes from other wastes to facilitate proper disposal. However, the construction industry and the general public have not demonstrated the ability or willingness to reliably and consistently segregate wastes. It may require considerable effort on the part of the C&D landfill management and staff to explain the waste restrictions to customers in order to obtain their cooperation.

Measures to educate landfill customers on the waste restrictions should include some or all of the following items:

- Flyers (and perhaps a web site) describing the types of allowable as well as unacceptable wastes (along with other landfill information).

- Signs (generally at the facility gate) listing the allowable and unacceptable waste types, and alerting customers that loads will be subject to inspection.
- Fee structure which penalizes customers for delivering unacceptable wastes to the facility.
- Notices issued to customers who have not complied with the waste restrictions.
- Knowledgeable staff to answer inquiries, explain requirements, and encourage cooperation.
- Meetings with contractors or groups to raise awareness and garner support for waste separation at the point of generation.
- Inspections at major construction and demolition sites to assess waste segregation.

Preparing Landfill Staff

Each individual involved in the waste screening program should be trained, safeguarded, and properly equipped to accomplish his or her tasks. It would also be appropriate for each individual to be aware of all components of the waste screening program, so the landfill staff compliment each other and function as a team.

Training

At a minimum, training should include reading the facility Operations Plan (including the sections on waste screening). For record keeping purposes, each individual should sign and date a statement that he or she has read, understands, and will work in accordance with the Operations Plan.

Training should also be provided on at least an annual basis. At a minimum, this may consist of landfill staff meetings to discuss operations, problems, changes, etc. Records should be kept on the topics and attendance at these meetings.

More comprehensive training is offered by KDHE on at least a biennial frequency. Please contact the Bureau of Waste Management to learn about upcoming training opportunities.

Additionally, other agencies and organizations may offer training related to waste screening and other landfill operations. One such group is SWANA, the Solid Waste Association of North America. SWANA regularly conducts landfill manager and operator training. A schedule of upcoming SWANA training events, and other information such as landfill

manager and operator certification, is available on their web site at www.swana.org.

Also, because waste inspections may involve the identification and handling of hazardous materials (such as toxic, ignitable, reactive, radioactive, bio-hazard or medical waste), landfill employees who will be directly involved in that activity should be trained accordingly. It is the owner's responsibility to ensure that landfill personnel receive health and safety training as appropriate for each employee's function. Some potential sources of information on this type of training may include the U.S. Department of Labor - Occupational Safety & Health Administration (OSHA), Kansas Department of Human Resources, University of Kansas, Kansas State University, and others.

Health and Safety

The health and safety of all landfill employees (in addition to all customers and other visitors) should be of paramount concern. Landfill employees should be protected in a number of ways, including the following:

- Physical examinations.
- Vaccinations.
- Appropriate limitations on repetitive or physically exerting activities.
- Protective clothing, boots, gloves, masks, respirators, safety glasses, etc.
- First aid kits.
- Fire extinguishers.
- Hand basin and sanitizer.
- Eye wash and full-body wash stations.
- Training.
- Avoiding unsafe conditions.
- Equipment lock-out/tag-out procedures.
- Communication available with other landfill employees and emergency response personnel.
- Contingency plans to address anticipated problems or emergencies.

Equipment and Resources

In addition to the safety equipment listed above, landfill employees typically need heavy equipment, hand held-equipment, forms, and other resources to conduct waste inspections. Heavy equipment such as a dozer may be used to spread the waste for inspection purposes, and is usually already available at the facility due to the requirements to spread, compact, and cover waste in the disposal area.

Hand-held equipment used in waste inspections may include rakes and shovels. Often the bucket of a loader is used to transport unacceptable wastes picked out of the waste screening area to a temporary storage container. Also, a camera may be useful to document unacceptable wastes.

Other resources should include inspection checklists, daily logs, incident reports, and reference manuals such as a guide on warning label and placard codes. Sample containers may be needed if materials will be shipped for laboratory analyses. Simple test supplies such as pH paper, paint filters, and volatile organic compound (VOC) detection equipment may be useful for determining waste characteristics. However, sampling and testing would not ordinarily be necessary for performing waste screening at C&D landfills.

Waste Screening Procedures

Waste screening at the landfill should generally include checks at the gate and in a designated area near the working face.

Gate Check

For each load, the gate attendant should note the identity of haulers and the origin of the waste. The gate attendant should also perform a preliminary inspection of each load (with the load remaining in the vehicle). All appropriate safety precautions should be taken, such as first securing the vehicle. Some facilities use an overhead video camera, with a video monitor in the gate house, to help the gate attendant visually inspect the waste in the vehicle provided the tarp is removed.

If the attendant identifies unacceptable wastes in the load, or if the hauler or generator has habitually delivered loads containing unacceptable waste, or if there are other reasons, the landfill may refuse to accept the load. Documentation of the load refusal should include at a minimum the date, time, driver's name, license plate number, hauling company name and address, size of the load, reason rejected, and inspector's name.

As a service to the customer, and to reduce the risk of illegal dumping, KDHE requests that landfills which reject a load offer information to the hauler about permitted facilities in the area which may accept the type of waste rejected. KDHE maintains a database

of permitted solid waste facilities and can provide this information as requested. If this type of information is maintained at the landfill, it should be updated periodically. If the landfill prefers not to offer this information to the hauler of a rejected load, at a minimum the landfill staff should suggest that the hauler contact KDHE to determine acceptable disposal options.

Designated Waste Screening Area

Waste screening should not occur in the working face due to safety concerns and because it is generally not practical. Also, the presence of unacceptable waste in the disposal area is a violation of state statutes.

A waste screening area near the working face of the landfill is a practical way to address the need for waste inspections. Waste screening areas should be:

- Clearly designated by signs or other means.
- Relatively level to provide adequate access and safety.
- Relocated as the working face moves over time due to the filling operations.
- Sized to accommodate the maximum volume of waste to be inspected at one time. In any case, the waste screening area should not exceed 10,000 square feet (about ¼ acre), and waste piles in that area should not exceed a height of 10 feet. Sufficient space should be available for waste spreading and inspection within the waste screening area.
- Cleared of waste within 24 hours after the waste has been deposited. KDHE may consider requests for additional time to remove waste from the screening area if supporting rationale is provided.

At a minimum, landfill staff should direct random loads plus all loads suspected of containing unacceptable wastes to the waste screening area for inspection. Facilities should consider inspecting every load, as any unacceptable waste in the disposal area is a violation of state statutes, may result in penalties, and could cause adverse environmental impacts if not corrected. The inspection frequency should be detailed in the Operations Plan for each facility.

The waste screening area must be sloped, and otherwise graded and controlled (e.g., with berms) as necessary to drain storm water runoff into the C&D

waste disposal area or other contact water management system. Storm water runoff from the waste screening area will be considered contact water and is not allowed to be discharged to surface waters or from the landfill property without an NPDES permit.

Unacceptable wastes must be removed from the screening piles prior to pushing the C&D waste into the disposal area. The unacceptable wastes must be directly hauled to a permitted facility for disposal or stored in an approved manner pending regular removal for disposal at a permitted facility.

Bureau of Waste Management Policy 02-01 outlines requirements for storage of screened wastes at C&D landfills. If stored at the facility, municipal solid waste screened from the C&D waste must be placed in containers that prevent waste release (including leachate leakage) and nuisance conditions. Covered storage containers are recommended to prevent precipitation from contacting the waste and to control litter, vectors, and odors.

Storage of unacceptable waste in a cumulative volume greater than 20 cubic yards must be documented in the approved Operations Plan for the facility, or a transfer station permit may be required. Unacceptable waste should be stored onsite for no more than 7 days; however, at small C&D landfills (less than 1,000 tons annually) storage may be allowed up to 14 days.

Storage of recycled materials is not subject to the cover requirement or volume and time limitations for unacceptable waste. However, salvaging must be addressed in the approved Operations Plan for the facility. Some key considerations are outlined in Technical Guidance Document SW 95-02, White Goods Storage, Recycling and Disposal. Appropriate storm water/contact water management and closure activities are other parameters which may have to be addressed in the Operations Plan.

The landfill should notify KDHE within one business day if hazardous waste, polychlorinated biphenyl (PCB) wastes, or medical wastes are discovered at the facility. These wastes must be handled, stored, and disposed in an approved manner. The Operations Plan should address these contingencies, as well as related issues such as removal of any contaminated

soil from the waste screening area and disposal in accordance with the applicable regulations.

Returning unacceptable waste to the hauler is permissible under certain conditions. Due to concerns that this practice could lead to an increase of illegal dumping, KDHE requires landfills to document returned waste similar to load refusals (as previously described under “Gate Check” in this document). The same type of hauler education as noted in that text would also be appropriate in this situation.

The facility staff responsible for waste screening should certify on daily reports that all waste was screened prior to disposal in the C&D landfill. This does not necessarily preclude the disposal of certain loads directly into the C&D landfill (i.e., bypassing inspection in the waste screening area) if adequate waste screening is accomplished by other means. However, inspecting each load in the waste screening area is generally considered the most effective way to comply with the waste restrictions.

Waste Placement

At least once each day that waste is received, the operator shall screen the waste and dispose of it by distributing it uniformly on the working face of the C&D landfill.

State Authority

According to Kansas Statutes Annotated (K.S.A.) 65-3402(v), “Construction and demolition landfill means a permitted solid waste disposal area used exclusively for the disposal on land of construction and demolition wastes. This term shall not include a site that is used exclusively for the disposal of clean rubble.”

Definitions of C&D wastes and clean rubble are provided in K.S.A. 65-3402(u) and (w), and further explained in Technical Guidance Document SW 94-02.

K.S.A. 65-3407 describes KDHE’s authority to permit solid waste disposal areas (including C&D landfills). Included in K.S.A. 65-3407(g) is the requirement that, “Each permit...shall be subject to such conditions as the secretary deems necessary to protect human health and the environment...such conditions shall include approval by the secretary of

the types and quantities of solid waste allowable for disposal at the permitted location.”

Federal Regulations

If facilities fail to comply with the Kansas statutory restrictions described above, 40 CFR 257.7 applies when conditionally exempt small generator (CESQG) waste (such as partially filled chemical containers) is disposed. If municipal solid waste (non-hazardous solid waste other than C&D waste) is disposed, then 40 CFR 258 (Subtitle D) applies.

These regulations require facilities to be designed, constructed, and operated with specific safeguards such as liners, leachate collection systems, and groundwater monitoring wells. Most, if not all, C&D landfills in Kansas do not meet these requirements. Therefore, if unacceptable wastes are not adequately screened and prevented from entering C&D landfills, the state’s authority to permit C&D landfills may be revoked.

Benefits of C&D Landfills

KDHE staff believe it is in everyone’s best interest to preserve the existence of C&D landfills in Kansas.

C&D landfills generally provide a lower cost waste disposal option (as compared with municipal solid waste landfills), and have other economic benefits such as reduced hauling distances. These economic factors are linked to environmental benefits as well, in that cost effective disposal reduces the incidence of illegal dumping and shorter hauling distances consume less fuel and generate less air pollution.

One component of preserving the C&D landfill option is improving compliance and thereby increasing public confidence in these facilities. The recent history of poor compliance has resulted in significant public resistance to the establishment of new C&D landfills in general.

In order to maintain a universe of C&D landfills in Kansas, it is imperative that only C&D wastes be disposed in those facilities. KDHE plans to increase the frequency of inspections at C&D landfills. However, it is the direct responsibility of each permitted facility to operate their landfill in strict compliance with the state requirements. An effective waste screening program is one such requirement.

For additional information regarding proper management of solid waste, you may contact the Bureau of Waste Management at (785) 296-1600 or the address at the top of this document, or visit the Bureau’s website at www.kdhe.state.ks.us/waste.